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August 1992



# PROGRESS

Mission Wye Site, Livingston, Montana



By the Montana Department of Health and Environmental Sciences

## Introduction

A draft Remedial Investigation (RI) Report for the Burlington Northern Mission Wye railroad environmental cleanup site near Livingston is now in a 30-day public comment period. The RI Report is meant to serve as the complete collection of data which characterizes site conditions and describes the nature and extent of the contamination. This report was prepared by Burlington Northern Railroad's (BN) consultant, RETEC of Colorado. The Montana Department of Health and Environmental Sciences (MDHES) oversees activities at the Mission Wye site and is currently reviewing the RI report. The information contained in the report will help

MDHES and the public come to a final decision about a site remedy.

MDHES encourages the public to become familiar with the findings of the remedial investigation. The public comment period on the RI Report begins August 30 and will end September 30, 1992. Comments should be sent to John Wadhams, MDHES, Cogswell Building, Helena, MT 59620. Copies of the report are on file in the Livingston Public Library, the Montana State University Library in Bozeman and the State Library in Helena.

## Investigations and results

In December 1990, Burlington Northern Railroad (BN), through its contractor, Remediation Technologies, Inc. (RETEC), submitted a work plan to the Montana Department of Health and Environmental Sciences (MDHES) to conduct a remedial investigation for the Mission Wye environmental cleanup site. The work to be conducted at the Mission Wye site is governed by the terms of a modified partial consent decree issued through the U.S. District Court. MDHES has overseen all field investigations conducted at the site. The objectives of the Mission Wye remedial investigation are to characterize the nature and extent of the waste material and determine the vertical and horizontal extent of soil and groundwater contamination.

BN conducted the remedial investigation (RI) in two phases. The RI presents information summarizing data collected at the site from groundwater, soil, surface water, sediment, and clay waste samples. The report identifies chemicals of concern as well as contamination sources and pathways for contaminant migration. Following is a brief summary of phases I and II of the remedial investigation and the results.

### PHASE I

The first remedial investigation phase was conducted during spring 1991. In July 1991 BN submitted a draft Phase I RI Report to MDHES.

### Investigations:

Soil gas and groundwater samples were collected to determine the impact to groundwater both on- and off-site. Soil

(Cont. on page 2)

### Site background

The Mission Wye site is located approximately five miles northeast of Livingston at the junction of U.S. Interstate 90 and U.S. Highway 89. The site is enclosed by a fence and covers approximately five acres. Burlington Northern Railroad (BN) used the area for disposal of acid-clay waste derived from an oil reclamation plant at the Livingston Rail Yard. Used locomotive crankcase oil was mixed with sulfuric acid and then pressed through a clay filter. The filtered oil was sold as a lubricant, and the remnant clay waste was placed in three unlined waste pits at Mission Wye. Other solid wastes and solvents were also periodically disposed at the site. An estimated 8,000 cubic yards of waste were disposed between 1955 and 1978. Much of the oily waste has seeped back up to the land surface and spread out over an area of nearly 40,000 square feet, six inches deep (this is referred to as the "seep area"). Previous investigations performed by the U.S. Environmental Protection Agency (EPA) indicated significant soil and groundwater contamination at the site.



## *Investigations and results (from page 1)*

gas measurements indicate the amount of contaminants evaporating from the groundwater. BN installed three wells to monitor seasonal changes in groundwater elevations.

### **Results:**

Based on the findings of the Phase I RI Report, BN agreed to conduct a second phase to further characterize the waste material, soil, and extent of groundwater contamination.

Groundwater quality near the site is impacted by volatile organic compounds, primarily solvents, in the buried wastes. These solvents dissolved in the groundwater are migrating east-northeast, consistent with groundwater flow direction. Local residences nearest the site are situated at least one-half mile to the northeast. Groundwater samples collected from these residential wells in November 1990 did not contain solvents.

The acid-clay waste contains high levels of volatile organic compounds, some semi-volatile organic compounds, and metals including chromium, copper, lead and zinc. A layer of water was found overlying the north waste pit and is assumed to be surface water from rain and snow. This overlying water also contains high levels of solvents which have leached out of the acid-clay waste. Downward seepage of this water beyond the edges of the waste-pits is assumed to occur.

Soil samples collected from test pit excavations adjacent to the waste pits indicated lateral spreading of contaminants (beyond the seep areas) was minimal.

### **PHASE II - 1991**

BN submitted a draft Phase II RI Report to MDHES in January 1992. Based on the findings and conclusions discussed in the report, groundwater investigations will continue during 1992.

### **Investigations:**

In August 1991 BN continued field investigations. Three borings were drilled in the north waste pit to collect waste samples. One additional sample was taken in both the south and east waste pits to collect soil from underneath the waste to assess the vertical migration of chemical contaminants from the waste material.

Four new monitoring wells were installed on- and off-site to further characterize groundwater contamination. Two were installed adjacent to the waste pits to characterize groundwater quality on-site, and two wells were installed northeast of the site to aid in determining the horizontal extent of groundwater contamination off-site. Two samples were taken to determine if heavier-than-water contaminants lie at the bottom of the aquifer, on top of the bedrock.

### **Results:**

Numerous volatile organic compounds, and some semi-volatile organic compounds and metals were again detected in samples collected from the north waste pit. Laboratory analysis

indicated there is potential for some of these contaminants to leach from the waste into underlying soils and groundwater. High levels of contaminants in the water overlying the pits also indicate the leaching potential of the waste material. Volatile and semi-volatile organic compounds and metals were detected under the waste in the south and east waste pits.

Contaminants were detected in an on-site well and in one of the new downgradient wells, indicating that groundwater contamination has spread off-site. When compared to previous groundwater samples collected by EPA in 1986, the data indicate significant fluctuations in groundwater contaminant concentrations between seasonal high and low groundwater levels (high water table in summer; low water table in winter).

Soil and water samples did not indicate the presence of heavier-than-water contaminants under the aquifer on top of the bedrock.

### **PHASE II - 1992**

#### **Investigations:**

In March 1992 BN sampled groundwater at the seven existing monitoring wells as part of the continuing Phase II investigations. They also collected three sludge samples from the surface of the north waste pit and the seep areas.

Four new monitoring wells were installed. Two were installed northeast of existing wells to determine the extent and amount of groundwater contamination off-site. Two additional wells were installed adjacent to and across from the waste pits to monitor groundwater quality in the immediate vicinity of the site.

#### **Results:**

Recent data indicate that groundwater contamination at the site will require the installation and sampling of additional monitoring wells to determine the extent of contamination.

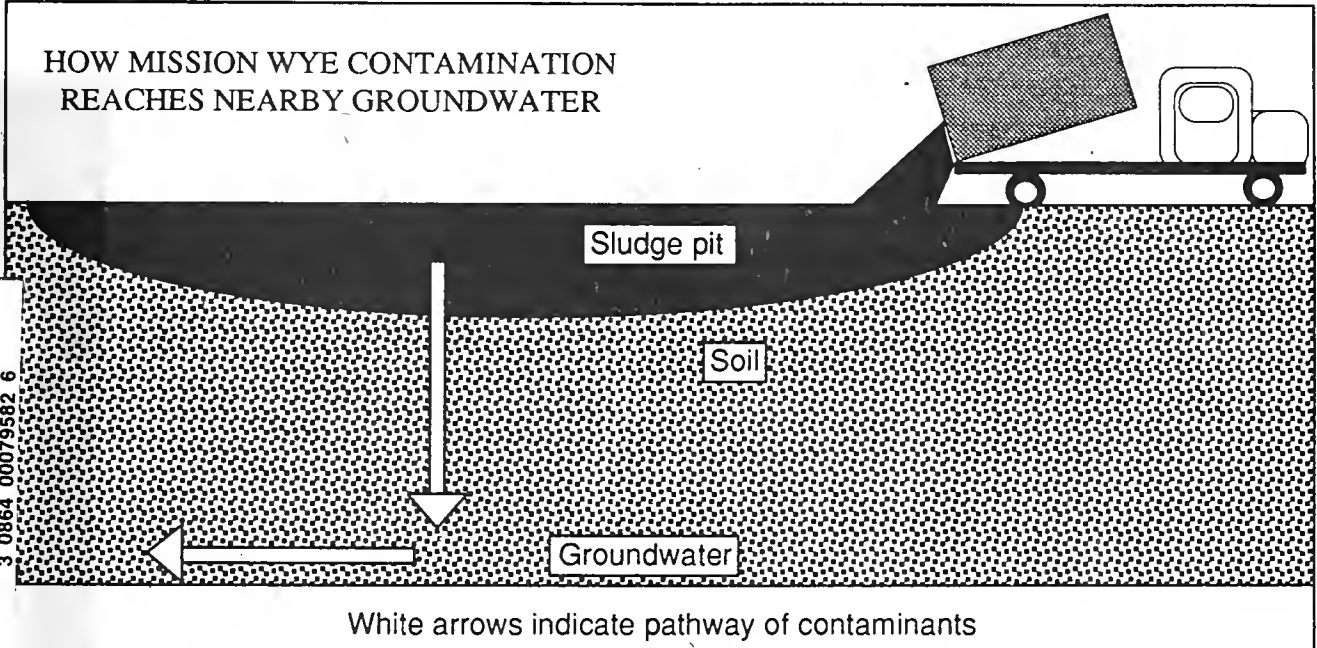
### **UPCOMING REPORTS AND ISSUES OF CONCERN**

- A risk assessment addressing human health and environmental risks associated with site contamination was submitted to MDHES by BN in June. MDHES is reviewing this report for accuracy and completeness.

- A comprehensive groundwater sampling plan will be established to monitor groundwater quality once the extent of contamination is established. MDHES recently sampled well water at the home closest to the site and is awaiting results. Additional monitoring wells will be installed between the site and residences to monitor for contamination.

- In August 1992, BN submitted the preliminary Evaluation of Alternatives Report to MDHES. After thorough evaluation by MDHES and a 30-day public comment period, MDHES will choose a final remedy which will be protective of public health and the environment.

# HOW MISSION WYE CONTAMINATION REACHES NEARBY GROUNDWATER



## Get involved in Mission Wye issues and decisions

The Montana Department of Health and Environmental Sciences (MDHES) is approaching the cleanup decision point for the Mission Wye site. MDHES strongly encourages the public to become involved in site issues and the decision-making process. There are a variety of ways to get involved:

### Document repositories:

MDHES has established document repositories at three locations. The repositories contain the site technical documents which the public is allowed to check out for a limited period. Documents can be found at the Livingston Public Library, the library at Montana State University in Bozeman and at the State Library in Helena.

### Public comments/correspondence:

The comment period for the Mission Wye Draft Remedial Investigation Report will begin August 30 and end Sept. 30, 1992. Written comments and correspondence regarding the Mission Wye site may be sent to MDHES site project officer

John Wadhams, Montana Dept. of Health and Environmental Sciences, Cogswell Building, Helena, MT 59620.

### Superfund hotline:

MDHES operates a 24-hour toll-free phone line for members of the public who have questions, comments and/or concerns about the Superfund process. The line is answered by Superfund staff during office hours and by an answering machine during evenings, weekends and holidays. Please feel free to make use of the hotline. The number is 1-800-648-8465.

### Back issues of progress reports:

MDHES has back issues of progress reports available upon request. To obtain progress reports about the Mission Wye and BN/Livingston sites or any other Montana site, please call MDHES public information officer Jane Stiles at 1-800-648-8465 or 406-449-4067 in Helena, or leave a message on the answering machine.

## Are you on our mailing list?

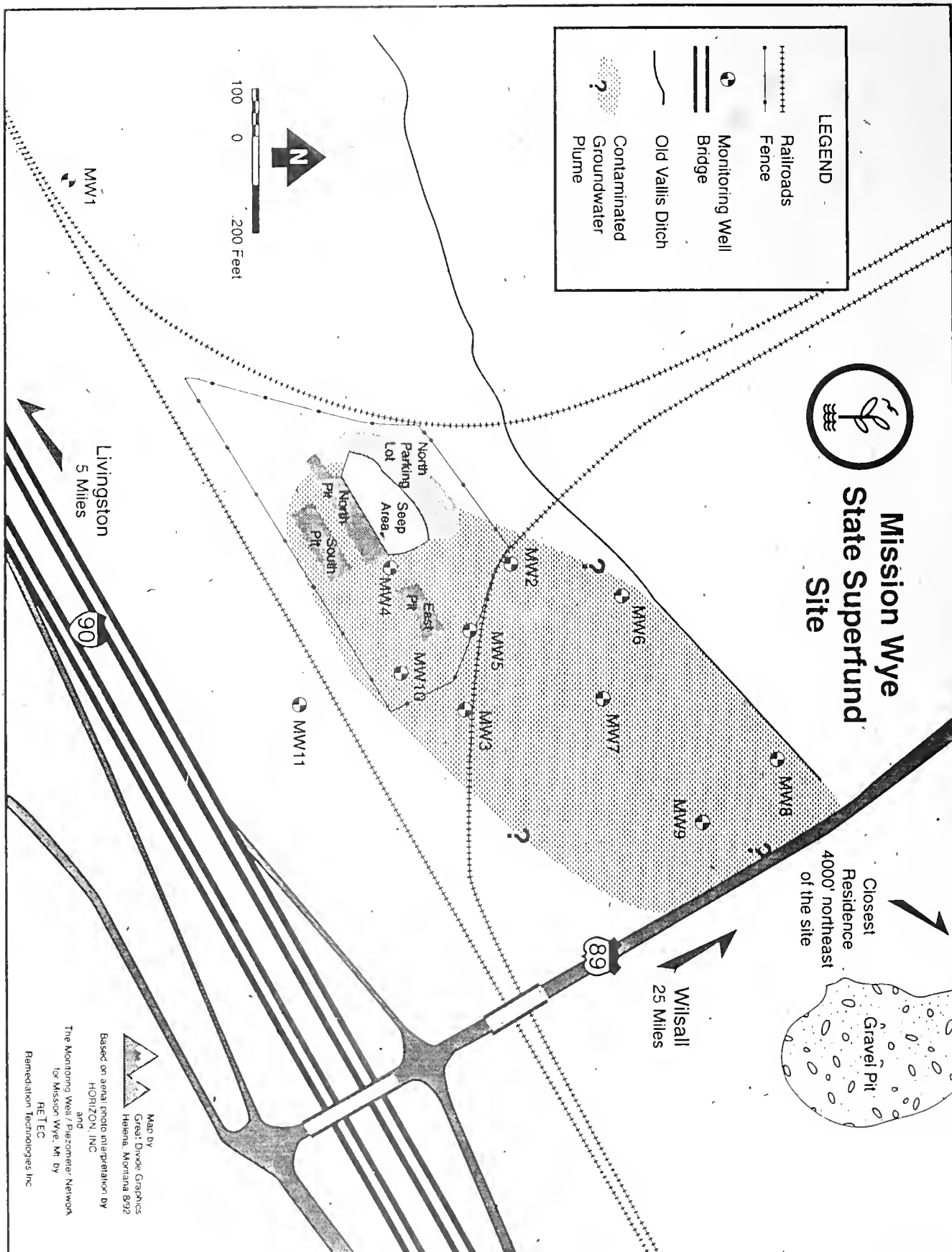
If you wish your name to be added to or deleted from the mailing list for the BN/Livingston site, or if you wish to update your address, please fill out, detach, and mail the following form to Jane Stiles, Montana Department of Health and Environmental Sciences, Cogswell Building, Helena, MT 59620.

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